

Lesson Summary

In a coordinate plane with perpendicular x - and y -axes, a *vertical line* is either the y -axis or any other line parallel to the y -axis. The graph of the linear equation in two variables $ax + by = c$, where $a = 1$ and $b = 0$, is the graph of the equation $x = c$. The graph of $x = c$ is the vertical line that passes through the point $(c, 0)$.

In a coordinate plane with perpendicular x - and y -axes, a *horizontal line* is either the x -axis or any other line parallel to the x -axis. The graph of the linear equation in two variables $ax + by = c$, where $a = 0$ and $b = 1$, is the graph of the equation $y = c$. The graph of $y = c$ is the horizontal line that passes through the point $(0, c)$.

Problem Set

1. Graph the two-variable linear equation $ax + by = c$, where $a = 0$, $b = 1$, and $c = -4$.
2. Graph the two-variable linear equation $ax + by = c$, where $a = 1$, $b = 0$, and $c = 9$.
3. Graph the linear equation $y = 7$.
4. Graph the linear equation $x = 1$.
5. Explain why the graph of a linear equation in the form of $y = c$ is the horizontal line, parallel to the x -axis passing through the point $(0, c)$.
6. Explain why there is only one line with the equation $y = c$ that passes through the point $(0, c)$.